

Del 1

# Work Order ID 68256

Monday, April 11, 2011 10:32:12 AM



Page 1

Item ID: D3183-045

Accept



Setup Start



Revision ID:

Item Name: Bearing Assembly

Stop



Start Date: 4/11/2011 Start Qty: 20.00



Cust Item ID:

Required Date: 4/14/2011 Req'd Qty: 20.00



Customer:

Reference:

Approvals: Process Plan:



Date: 11-04-11

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3183

Rev C1

100



Hardinge CNC LATHE SMALL

Hardinge

Memo

Hardinge CNC Lathe Small

0.00

0.00

11/4/26

20 ✓

110



Memo

QC

Quality Control

0.00

0.00

11/4/26

20 ✓

120



Memo

QC

Quality Control

0.00

0.00

11/4/26

20

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

**Work Order ID 68256**

Monday, April 11, 2011 10:32:12 AM



Page 2

Item ID: D3183-045

Revision ID:

Item Name: Bearing Assembly

Start Date: 4/11/2011 Start Qty: 20.00

Required Date: 4/14/2011 Req'd Qty: 20.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



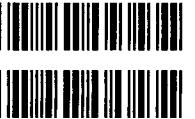
QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center ID

130



Small Fab

Operation  
Description

Small Fab

Set Up/  
Run Hours

0.00

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Small Fab

Memo

Press D3183-5 Bearing into D3183-9 Cap as per Dwg D3183.

0.00

0.00

8/10/09

140



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

150



Packaging

Packaging

Identify as per dwg & Stock Location: 236

0.00

Memo

0.00

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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**Work Order ID 68256**

Page 3

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160



QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

## Picklist Print

Monday, April 11, 2011 10:32:18 AM

Page 1

**Work Order ID:** 68256



**Parent Item:** D3183-045



**Parent Item Name:** Bearing Assembly

**Start Date:** 4/11/2011

**Required Date:** 4/14/2011

**Comments:** IPP A 04.02.18 New issue KJ/DS

**Start Qty:** 20.00

**Start Qty:** 20.00

**Required Qty:** 20.00

**Required Qty: 20.00**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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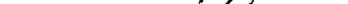
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	68256
Description: Cap	Part Number:	D3183-9
Inspection Dwg: D3183	Rev: C1	Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

## X First Article      Prototype

Measured by:		Audited by:		Prototype Approval:	N/A
Date:	11/4/26	Date:	11-4-26	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.20	New Issue (P/O D3183-045)	KJ/RF	
B	06.03.09	Dimension Ø0.830 was Ø0.850	KJ/JLM	<i>[Signature]</i>

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)								
DATE	STEP	Description of NC Section A	Corrective Action			Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date					

NOTE: Date & initial all entries

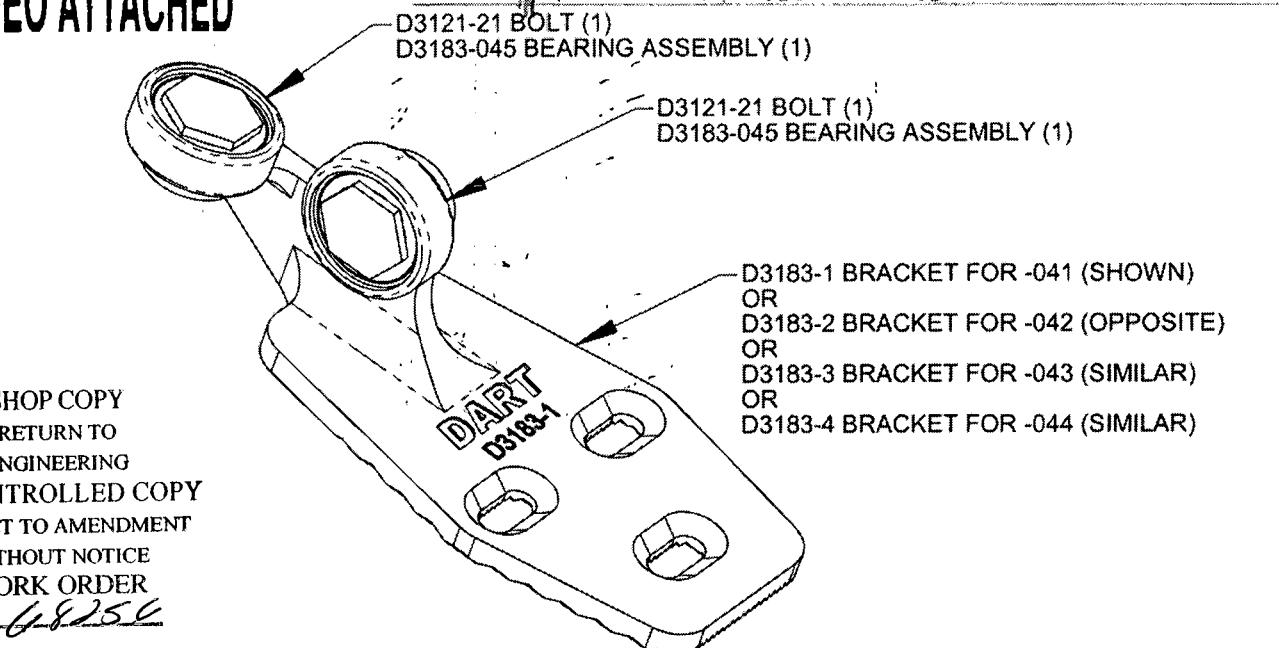


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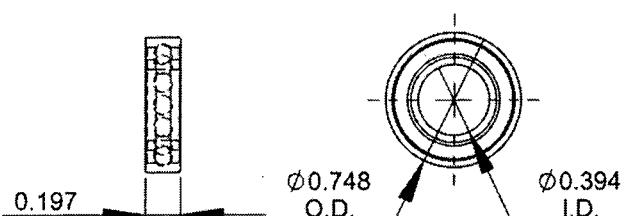
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D3183 REV. C SHEET 1 OF 4
DATE	04.02.17	TITLE SCALE BRACKET ASSEMBLY 1:1

RELEASED  
04.03.01  
DEO ATTACHED

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 68256

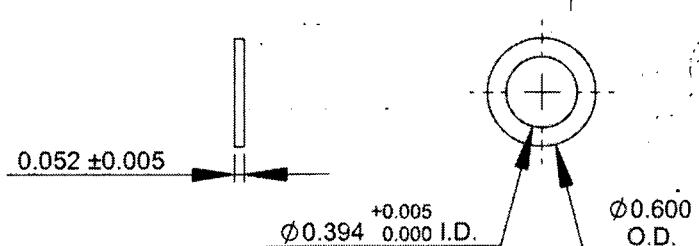


*p11/04-1*  
**D3183-041 BRACKET ASSEMBLY (SHOWN)**  
**D3183-042 BRACKET ASSEMBLY (OPPOSITE)**  
**D3183-043 BRACKET ASSEMBLY (SIMILAR)**  
**D3183-044 BRACKET ASSEMBLY (SIMILAR)**



**D3183-5 BEARING:  
SPECIFICATION CONTROL DRAWING**

- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



**D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

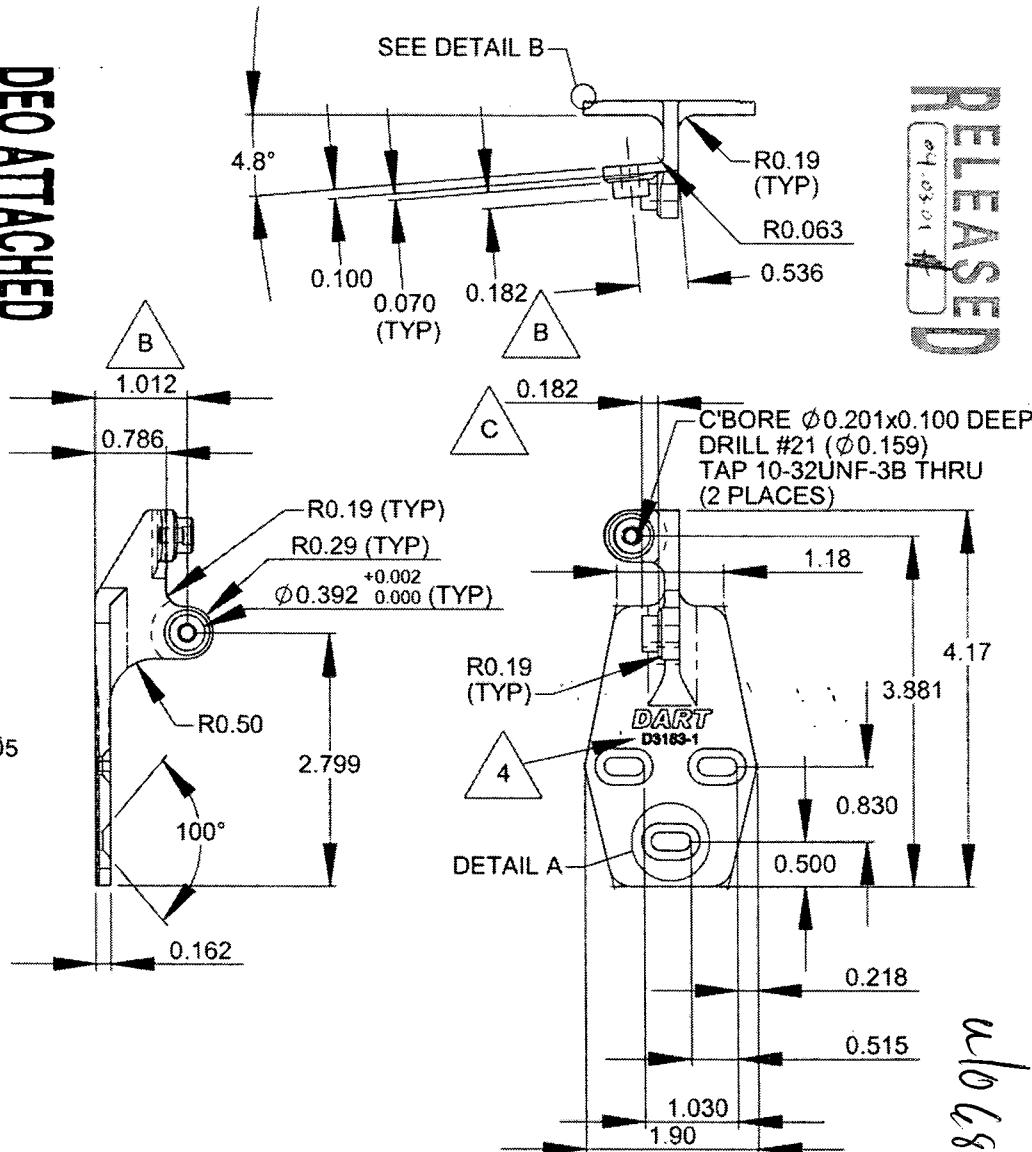
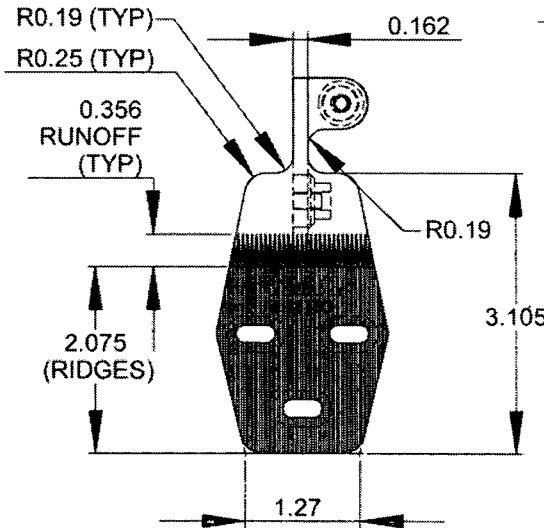
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D3183-1 BRACKET SHOWN  
D3183-2 BRACKET OPPOSITE

- 1) D3183-1 CAN BE MADE FROM D3183-3  
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS  
OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

~~DEO ATTACHED~~



u/o 68154



DESIGN		DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3183	REV. C	SHEET 2 OF 4
DATE 04.02.17	TITLE BRACKET ASSEMBLY		SCALE 1:2	

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

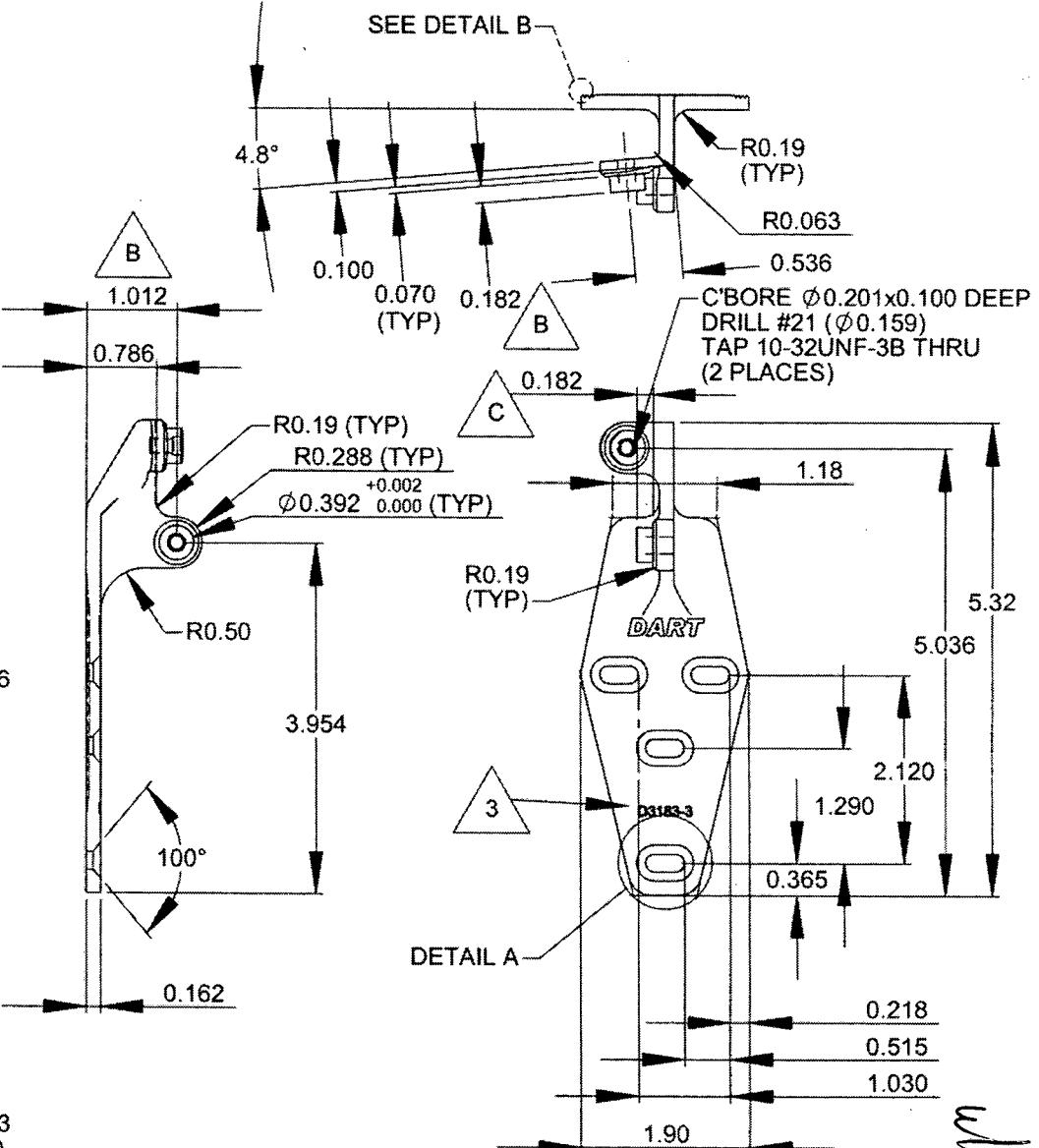
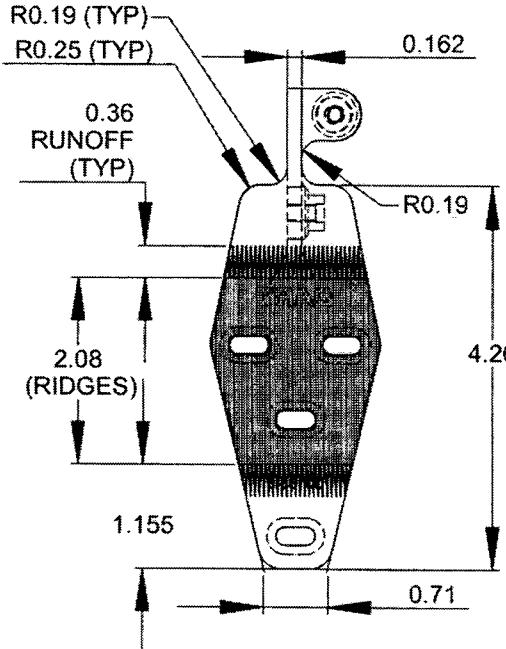
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

**DART**COPY IS  
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DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b>
		HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.
		D3183
DATE	04.02.17	TITLE
		BRACKET ASSEMBLY
		SHEET 3 OF 4
		SCALE

*WB 68256***DEO ATTACHED**  
**RELEASED**  
*24-04-01***D3183-3 BRACKET SHOWN**  
(REPLACES BELL P/N 412-030-304-105)**D3183-4 BRACKET OPPOSITE**  
(REPLACES BELL P/N 412-030-304-106)1) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi

2) BREAK ALL SHARP EDGES 0.005 TO 0.015

3) ENGRAVE DART P/N &amp; LOGO AS SHOWN

4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

5) ALL DIMENSIONS ARE IN INCHES

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

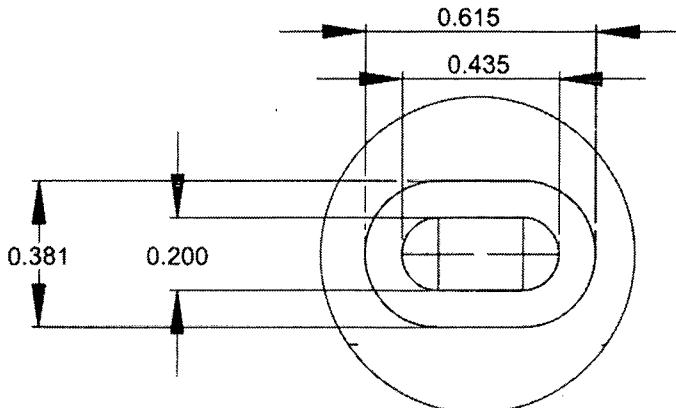
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DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng		Sign & Date			

NOTE: Date & initial all entries



DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
		D3183	SHEET 4 OF 4

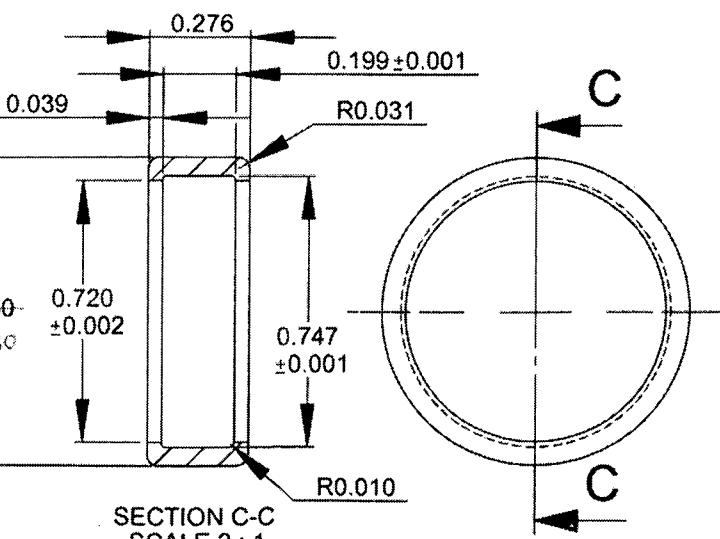
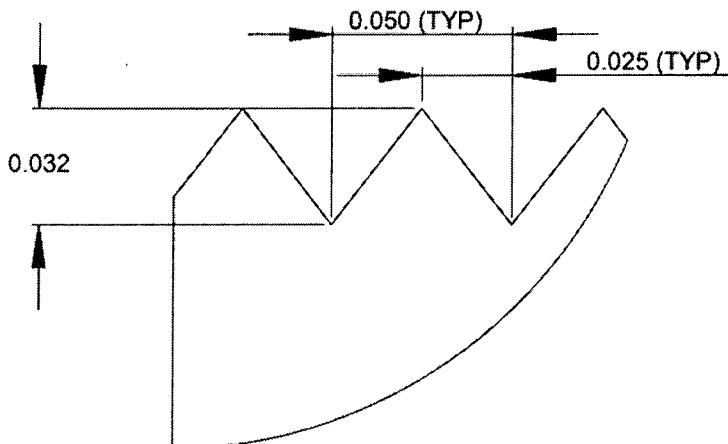
DATE 04.02.17 TITLE BRACKET ASSEMBLY SCALE 1:1



RELEASED  
04.03.01

DEO ATTACHED

DETAIL B (20 : 1)



#### D3183-9 CAP

- 1) MATERIAL: DELRIN ROD, Ø1.00  
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

#### D3183-045 BEARING ASSEMBLY

- 1) ASSEMBLE D3183-5 BEARING AND D3183-9 CAP

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

DRAWING NO. D3183	TITLE BRACKET ASSEMBLY	REV.C1	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D3183-C1-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>qp</i>	CHECKED <i>1</i>		MFG. APPR. <i>AA</i>	APPROVED <i>MP</i>		DE APPR. <i>MP</i>	
DATE 10.05.14	DATE 10.06.30		DATE 10.06.30	DATE 10/06/30		DATE 10.06.30	

D3183-5 BEARING

ADD POSSIBLE SUPPLIER: KML P/N 6800-ZZ

BASIC LOAD RATING REQUIREMENT: Cr = 1720 N (386 lb) MIN [DYNAMIC]  
Cor = 840 N (188 lb) MIN [STATIC]

REF PAR 10-012

*W/0 68256*

**RELEASED**  
2010-07-22  
*MP*

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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